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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,058	10/02/2000	Steve W.L. Yeung	25821.P028	4464

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Blakely Sokoloff Taylor & Zafman LLP
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EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,058

Applicant(s)

YEUNG, STEVE W.L.

Examiner

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 August 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 08/21/2003 and entered as paper No. 8 is considered by the examiner, except the Yeung et al. reference because this reference was filed in the IDS filed on 01/17/2003 and considered by examiner.

Specification

2. It is noted Applicants that a "cleaner" copy of the specification submitted in the amendment filed on 08/21/2003 is not readable, e.g., page 4, line 5, page 5, matrix E, page 6, the last fourth line, page 8, the formula of P, and many more. It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the specification, to take into consideration these editorial situations and make changes as necessary. The examiner is expected a new substitute specification including a section heading for each section, see 37 CFR 1.77(b).

3. The amendment filed on 08/21/2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Figure 1 illustrates a typical ... circular matrix, see page 2, lines 12-13, since the original disclosure, when filed, does not support for this material.

Applicant is required to cancel the new matter in the reply to this Office Action.

Drawings

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4. It is noted Applicants that the proposed drawing, i.e., figures 1 and 2, is disapproved because the new matter is entered, since the original disclosure, when filed, does not contain such description and details a common driving signal having a typical waveform as illustrated in fig. 1, and a matrix A representing an orthogonal block circular matrix as shown in fig. 2.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features, “a plurality of orthogonal addressing functions”, “row (common) driving matrix” and “an orthogonal block-circulant matrix” as recited in claim 1, “a row driving (common) driving matrix is a block diagonal matrix” and “the building blocks”, as recited in claim 4, “a row and column interchanged version of the row (common) driving matrix” as recited in claim 5, “row (common) driving matrix comprises orthogonal block-circulant building blocks” as recited in claims 6 and 8, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

6. (Twice) Claim 4 is objected to because of the following informalities: it does not indicate the claim which depends on. Appropriate correction is required.

7. It is noted Applicants that claims 11-13 are indicated “currently amended”; however, examiner could not find where the changes are made in these claims.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1, 2 and 4-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding to these claims, the disclosure, when filed, does not contain sufficient information regarding to the claimed features as follows:

i. the feature, “a driving method for a **passive** liquid crystal display”, see lines 1-2 of independent claim 1. The disclosure, specifically page 1, second paragraph, discloses a well-known passive matrix driving scheme adopted for driving a LCD. However, the original disclosure, when filed, does not expressly disclose the present invention is directed to the same type of LCD, i.e., a **passive type** of LCD.

ii. the feature, “a plurality of orthogonal addressing functions”, see lines 3-4 of independent claim 1. The disclosure, specifically page 2, lines 3-5, discloses a plurality of orthogonal block circulant matrices. However, the original disclosure, when filed, does not disclose expressly the underlined feature above.

iii. the feature, “said plurality of orthogonal addressing functions is applied **simultaneously** to a plurality of rows of the display matrix”, see lines 5-7 of independent claim 1. The original disclosure, when filed, does not disclose expressly the underlined feature above.

Accordingly, the original disclosure, when filed, does not disclose expressly the underlined features above, in such a way as to reasonably convey to one skilled in the relevant

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art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Additionally to claim 2, the original disclosure, when filed, does not disclose expressly the feature, “there are row and column interchanges of said addressing functions”. The disclosure, specifically original claim 2, discloses there are row and column interchanges of said row (common) driving matrix. However, the original disclosure, when filed, does not disclose expressly the underlined feature above.

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 5-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claim 5, the original disclosure, when filed, does not disclose expressly the underlined feature, “said the row (common) driving matrix is a row and column interchanged version of the row (common) driving matrix”, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, .i.e., how the row (common) driving matrix is a row and column interchanged version of itself.

Regarding to claims 6-8, the disclosure in the instant application does not contain such description and details what matrices disclosed in the application, corresponding to the claimed row (common) driving matrix and the corresponding orthogonal block-circulant building blocks.

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Further, the independent claim 1 recites the row (common) driving matrix consisting of orthogonal block-circulant matrices, i.e., the row (common) driving matrix does not comprising any other elements except the orthogonal block-circulant matrices. However, the dependent claims 6 and 8 recites the row (common) driving matrix further comprising orthogonal block-circulant building blocks, so as to make these claims not consistent with the independent claim 1.

Regarding to claim 9, the disclosure in the instant application does not contain such description and details what matrices disclosed in the application, corresponding to the claimed row (common) driving matrix and the corresponding order-4 orthogonal block-circulant building blocks.

Regarding to claim 10, the disclosure in the instant application does not contain such description and details what matrices disclosed in the application, corresponding to the claimed row (common) driving matrix and the corresponding order-8 orthogonal block-circulant building blocks.

Regarding to claim 11, the disclosure in the instant application does not contain such description and details “(5) all alternatives ... (i)-(iii)”, see last 8 lines, e.g., what “E”, “ER_{4,2}” and all alternatives of (1)-(4) look like and are disclosed in the application.

Regarding to claim 12, the disclosure in the instant application does not contain such description and details “(28) all alternatives ... (i)-(iii)”, see last 8 lines , e.g., what “E”, “ER_{8,2i}” and all alternatives of (1)-(4) look like and are disclosed in the application.

12. It is noted Applicants that the claimed limitations must be inherently or expressly disclosed in the application, rather than generally recognized by one of ordinary skill in the art. See MPEP 2163.07(a).

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13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1, 2 and 4-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims above, these claims recite the limitation "said display matrix" in 7 of independent claim 1. There is insufficient antecedent basis for this limitation in the claim.

15. It is noted Applicant that due to the rejection under 35 USC 112 above, the following art rejections are based as best understood by the examiner.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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17. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani et al. (USPN: 6,054,972), hereinafter Otani.

As per claim 1, the claimed invention reads on Otani as follows: Otani discloses a method for driving a passive liquid crystal display (LCD) (fig. 7), comprising a plurality of orthogonal addressing functions applied simultaneously to a plurality of row of the display matrix (307) (fig. 11), said plurality of orthogonal addressing functions comprising a row driving matrix (a matrix of scan data 10, see fig. 3, specifically at col. 16, line 7) consisting of orthogonal block-circulant matrices (the normal form Hadamad matrices T in eight-order, see col. 5, line 40 through col. 6, line 10, specifically at col. 16, lines 7-13). The elements in the claim are read in the reference.

Regarding to claim 4, Otani further teaches the row driving matrix (i.e., a matrix of scan data 10) being a block diagonal matrix and the building blocks (matrices T, see Formula 8, at col. 5) are orthogonal block-circulant, further see fig. 3, col. 16, lines 7-13.

Regarding to claim 6, Otani further teaches the orthogonal block-circulant building blocks (i.e., matrices T) generated by using a paraunitary matrix (a sub matrix S, see Formula 10, at col. 6, further see col. 16, lines 7-13).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani in view of Applicant's Admitted Prior Art (page 1, last paragraph), hereinafter AAPA.

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As per claims above, Otani further discloses row interchange of the driving matrix in order to obtain higher contrast (col. 5, lines 32-60). Accordingly, the difference between the invention defined in claim 8 and the Otani reference is the addition of the column interchange of the driving matrix.

However, AAPA teaches that the column interchange of the driving matrix is suggested to prevent the problem of loss contrast due to frame response, the crosstalk problem due to the difference in frequencies in the rows of the driving matrix and the problem of high computation and memory burden (see page 1, last paragraph, lines 1-16).

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include AAPA's teaching, i.e., the column interchange of the driving matrix, in the protocol of Otani because this would improve the quality of the LCD device by preventing the problem of loss contrast due to frame response, the crosstalk problem due to the difference in frequencies in the rows of the driving matrix and the problem of high computation and memory burden, as taught by AAPA (see page 1, last paragraph, lines 1-16).

20. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani in view of Sekihara et al. (USPN: 4,993,075), hereinafter Sekihara.

As per claim 8, Otani further discloses the row driving matrix is based on orthogonal block-circulant building blocks (matrices T, see Formula 8, at col. 5, and col. 16, lines 7-13), but does not disclose expressly the orthogonal block-circulant building blocks generated by nonlinear programming. Accordingly, the difference between the invention defined in claim 8 and the Otani reference is the orthogonal block-circulant building blocks generated by nonlinear programming.

However, Sekihara teaches that the generation of orthogonal matrix by nonlinear programming is well-known to one skilled in the art at the time of the invention was made, to easily increase the speed of processing (col. 7, lines 8-9, col. 8, lines 1-53 and col. 2, lines 10-11). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Sekihara's teaching, i.e., the orthogonal block-circulant building blocks generated by nonlinear programming, in the protocol of Otani because this would easily increase the speed of processing, as taught by Sekihara (col. 2, lines 10-11).

Regarding to claims 9-10, Otani further teaches that the orthogonal block-circulant building blocks (i.e., matrices T) are in eight-order (see Formula 8 at col. 5, and col. 16, lines 7-13) or any order (col. 15, lines 24-29). Therefore, these claims are rejected for the reason as set forth above.

Response to Arguments

21. With respect to the drawing objection, Applicants' request for the drawing approval, page 10, is not accepted because the new matter is entered, since the original disclosure, when filed, does not contain such description and details a common driving signal having a typical waveform as illustrated in fig. 1, and a matrix A representing an orthogonal block circular matrix as shown in fig. 2.

22. With respect to the rejection under 35 USC 112, first paragraph, to claims 2 and 5, Applicant's argument filed on page 11-13, is not persuasive because the claimed limitations must be inherently or expressly disclosed in the application, rather than generally recognized by one of ordinary skill in the art. See MPEP 2163.07(a).

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23. Applicant's arguments with respect to independent claim 1, pages 13-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

JHN

November 3, 2003


Amare Mengistu
Primary Examiner